From: Hydrostor

Date: 19 September 2024

Re: **Hydrostor submission to the AEMC on the Improving cost recovery arrangements for non-network options**

Hydrostor welcomes the opportunity to engage with the AEMC's consultation paper on improving cost recovery arrangements for non-network options (5 September 2024). The proposed rule change comes at a pertinent time, where the ability of the regulatory framework to deliver innovative solutions to the energy transition are being tested in real time. Hydrostor appreciates the AEMC's framing of the issue, that is, exploring the barriers to non-network options (NNO's) being implemented. It follows a clear line with previous reform including Improving security frameworks for the energy transition and continues the intent of the AER's Making the ISP Actionable.

Hydrostor, a private company founded in 2010 in Canada, is a developer of proprietary Advanced Compressed Air Energy Storage technology (A-CAES). The company has operational facilities in Ontario, Canada, and is in late-stage development for projects in California, USA and NSW, Australia, with Australian operations based in Melbourne.

A-CAES is based on the proven (since the 1970s) compressed air technology but solves the two main constraints of traditional compressed air energy storage by storing and using heat, eliminating the need for natural gas, and constructing optimised sub-surface caverns instead of exclusively salt caverns. The resource is a 100% emission free solution that can be strategically and flexibly located where needed.

A-CAES has unique advantages as a long-duration energy storage solution. It can be constructed in places where other forms of large-scale synchronous generator-based storage cannot (like pumped hydro and traditional-CAES). Unlike battery storage technology, A-CAES is cost-effective at long durations (6 hours+), has an exceptionally long service life of over 50 years without degradation and without any requirements for augmentation. It also provides numerous grid benefits like synchronous inertia, frequency response, and managing minimum demand. These benefits could translate well into multiple non-network options in RIT-T processes from a single facility.

As a proponent of a non-network option, Hydrostor is in a unique position to comment based on lived experience. Hydrostor's Silver City Energy Storage project was selected by Transgrid to provide reliability in Broken Hill through a RIT-T process. This project will be the first of its kind large scale A-CAES facility in the world. The project will also be the first non-network option where the network support agreement and associated cost recovery underpins the financeability of a new grid-scale storage facility. As set out in the paper, it will be the first of many, as technologies develop to provide more services to the network.

The AEMC has acknowledged, in the consultation paper, that in certain cases NNO's have the potential to be delivered at a lower cost than network solutions. With the change in the NEO to acknowledge the need to reduce greenhouse gas emissions it needs to be recognised that NNO's can also bring innovative solutions for consideration. NNOs like Hydrostor, offer clean and innovative solutions to enable the transition to net zero.

NNO's often involve companies committing resources and making capital investments that have long useful lives. Companies proposing to provide these services need to raise funds

from debt and equity investors. Among many risks that need to be considered by those financing these projects is identifying sources of revenue for the life of the assets. This risk does not apply to just NNO's as all generation and network investors require similar certainty. It needs to be emphasised that without revenue certainty, greenfield NNO projects cannot be progressed by the private sector.

Hydrostor believes that the issues raised in this rule change are important as the Australian transition to net zero has real urgency. This rule change is critical to the development of all NNO's in the NEM. The pipeline of investments from not only Hydrostor but many others cannot proceed with the issues covered off in the rule change being addressed and its urgent conclusion is requested.

This submission endeavours to answer some of the questions set out by the AEMC in the consultation paper. The key themes Hydrostor would like highlighted are:

1. A proponent's experience of revenue uncertainty and other barriers to the execution of a non-network option,
2. The missing link between the RIT-T and cost recovery for NNOs creates uncertainty for NNO proponents,
3. Both the proposed solution and final rule on Improving security frameworks decrease the barriers for non-network options identified in the consultation paper, and Hydrostor supports these changes as an important step forward that can be implemented in a timely fashion to support urgent regulatory challenges facing current non-network options.
4. Aligning the frameworks for network augmentation and system security services will reduce complexity for NNO proponents and reduce regulatory burden on TNSPs, and the AER.
5. Hydrostor also notes that there may be further regulatory changes that can improve the uptake of non-network options into the future, but other changes should not hold up the important changes currently identified.

Hydrostor appreciates the AEMC's prompt response to the proposed rule change on improving cost recovery for non-network options. It is a critical reform to the energy transition, as it levelises the playing field between network and non-network options. This rule change has the potential to give better effect to the original intent of the RIT-T process, while delivering the principles of the NEO. Where NNOs are the preferred option, they have demonstrated they are the least-cost and most benefit to the long-term interest of consumers and the identified needs of the network. The risk of barriers caused by regulatory uncertainty are that these options, while preferred, cannot be delivered, leaving consumers with more expensive and less beneficial solutions.

Thank you for the opportunity to provide our views on the barriers and solutions with see to implementing NNOs. We look forward to continuing the consultation period and would welcome further discussion.

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Responses to questions set out in Consultation Paper

To what extent is initial revenue uncertainty a material barrier to NNOs being used to provide network support services to TNSPs?

Initial revenue uncertainty is a significant barrier to NNOs being used for network support services.

In understanding the barriers for non-network options, it is first important to appreciate the process by which a project is selected as a preferred option. Significant work is put into the RIT-T process by proponents. Submissions to EOIs will include full technical schedules, commercial schedules and total cost of a new project (not just the cost of the service), which is often related to a 30 year + lifespan infrastructure asset. These are then assessed against the network option and other non-network options. The costs and benefits are assessed across multiple rounds (PSCR, PADR) before a preferred option is selected based on the net benefit to the network and consumers. For an unregulated entity, this process is robust and thorough in its assessment and demonstration of value to the network and consumers. Following this process, proponents then must negotiate a contract for service with the TNSP, which is then relied upon for financing the facility.

The barrier to NNOs then becomes the regulatory risk held by the network counterparty. This initial cost recovery uncertainty and ongoing cost recovery uncertainty impacts an otherwise robust and commercial contract negotiation. In the current framework, any regulatory risk faced by the network is shared with proponent. NNO's often involve committing resources to capital investments that have long useful lives. Companies providing these services need to raise funds from debt and equity investors. Among many risks that need to be considered in the projects is being able to identify, with certainty, future and ongoing sources of revenue – this is critical. This risk does not apply to just NNO's as all generation and network investors require certainty. It needs to be emphasised that without revenue certainty NNO projects cannot be progressed by the private sector for the benefit of networks and consumers.

To what extent is ongoing revenue uncertainty a material barrier to NNOs being used to provide network support services to TNSPs? Do you agree that the existing requirement for the AER to approve ongoing NNO expenditure does not provide sufficient certainty?

Ongoing revenue uncertainty is also a significant barrier to NNOs being used to provide network support services. The current regulatory framework does not accommodate the commercial reality of how long-life capital assets are developed by the private sector.

As mentioned in the previous response, NNO's often involve committing resources to capital investments that have long useful lives. Pricing for these long-term contracts involve analysis of key changes to the payment profile, the methodology of which are included in the network support agreement. Due to the long-life of the asset and the contract for services, revenue uncertainty of agreed changes to the payment profile in certain circumstances, creates a further barrier to NNOs being implemented.

A key risk raised in the consultation paper is uncertainty around the treatment of a termination payment. For a proponent, it is a risk particularly considering that a 30yr+ infrastructure capital project requires financing certainty. The termination payment, if payable, is considered part of the agreed network support agreement, however there is

ambiguity in the market as to whether its payment would be considered as a network support payment under the current definition. There is also uncertainty as to how the AER might assess its payment for prudency and efficiency, and such a payment has not been tested within the current framework to our knowledge (given the size of the risk of non-recovery). The network support payment is always critical to the ultimately financeability of what is fundamentally a capital project. Therefore, uncertainty around if a termination payment can be recovered by a TNSP becomes a material barrier to the NNO as it would materially impact the ability to reach financial close.

To what extent would the proposed solution address the issues identified? Are there specific elements of the proposal you do or do not support, if so, why? Are there alternative solutions that are likely to better support the achievement of the NEO?

Based on our understanding of the current framework and its issues, Hydrostor believes that the proposed solution meets the objectives of removing initial and ongoing cost recovery barriers for NNOs. Creating more certainty upfront will make the contracting process smoother, and therefore enabling innovative solutions to come online faster, in line with the intent of the NEO and Australia's net zero goals.

As previously described, the RIT-T process for project proponents is rigorous. Where a barrier does present itself is in the missing link between the assessment outcome of a RIT-T to cost recovery for NNOs in terms of a network support cost pass through – there is not a clear and certain path from a positive RIT-T to cost recovery certainty for NNOs. This missing link is especially concerning for proponents engaging in this framework for the first time.

Currently, the *operating expenditure* factors include that the AER must have regard to in assessing forecast operating expenditure in a revenue determination include: "the extent to which the Transmission Network Service Provider has considered and made provision for efficient and prudent non-network options; any relevant project assessment conclusions report required under clauses 5.16.4 or 5.16A.4"; However, this requirement is not included in a network support cost pass through assessment. It would also be interesting to understand how the AER may apply the new NEO to its assessment, specifically how it will value emissions reductions directly and the ability of a facility to enable more renewables on the grid. While these benefits will be assessed in future RIT-T processes, it will provide greater transparency for NNO proponents and networks to understand how this will translate in the assessment of a network support allowance and network support pass throughs.

Hydrostor agrees with the proposal to replicate the obligation within 6A.7.2 Network support cost pass through. This change would create a clearer link between the RIT-T and the network support cost pass through. It is unclear as to why for a network support payment the *capital expenditure factors* need to be assessed as the cost for service being passed on is only operating expenditure for the network operator, rather than a capital expenditure. It would make more sense for the factors the AER must consider in network support cost recovery be consistent between ex-ante and ex-post assessments.

Are there reasons the NNO cost recovery framework for network augmentation should be different to the approach recently implemented under the Improving security frameworks for the energy transition final rule?

There are many parallels between the issues identified and proposed solution in the Rule change process for Improving security frameworks for the energy transition and the

consultation paper. Both propose more flexible adjustments to network support allowance and ex-ante assessment of their NNO-related costs, including review of the methodology of payments. A key residual point of concern remains regarding clarity of the classification and assessment of an early termination payment; the Improving security frameworks rule change would improve certainty from the current state (given the cost methodology assessment process) but, as noted earlier, further specificity and clarity would provide benefits to NNO financeability. There is a scale difference between the types of facilities providing network augmentation services and those providing system security, leading to larger financial risk which is managed through the longer contracts and termination payments.

As technologies like ACAES and others develop, they will be in a better position to provide multiple NNO solutions. From a proponent's standpoint, aligning the regulatory framework across network augmentation and system security would increase transparency of the expectations of the AER around NNOs and reduce the burden for all parties involved – it would be complex and costly to navigate different cost recovery/efficiency assessment regimes for services of a similar nature being provided by a single facility. The proposed solution does appear to go some way in reducing the regulatory uncertainty that is creating barriers to NNOs. It does so in a similar fashion to the system security final rule. Therefore, aligning the two would both provide more cost recovery comfort than the current regulatory framework, as well as reduce regulatory and administrative burden.

Timely implementation is critical

As noted earlier, Hydrostor sees a number of other potential improvements to the regulatory framework that could be explored to improve the uptake of NNOs into the future. However, Hydrostor supports the current rule change (including aligning to the Improving security frameworks rule change) as an important and material step forward in providing cost recovery certainty for NNOs that will unlock current projects seeking to achieve financial close with reliance on NNO revenue streams. A timely solution to the current cost recovery barrier is critical, or risk current NNO projects not proceeding, and Hydrostor supports this rule change being finalised as quickly as possible.